EXHIBIT A
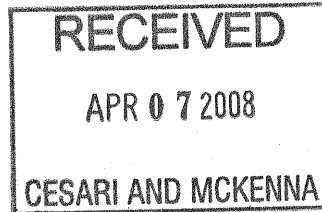
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
95/000,324	02/08/2008	6,857,001	347155-29	8186

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EXAMINER
MENEFEE, JAMES A

ART UNIT	PAPER NUMBER
3992	

MAIL DATE	DELIVERY MODE
04/04/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

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Transmittal of Communication to Third Party Requester
Inter Partes Reexamination

REEXAMINATION CONTROL NUMBER *95/000,324*.

PATENT NUMBER *6,857,001*.

TECHNOLOGY CENTER *3999*.

ART UNIT *3992*.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above-identified reexamination proceeding. 37 CFR 1.903.

Prior to the filing of a Notice of Appeal, each time the patent owner responds to this communication, the third party requester of the *inter partes* reexamination may once file written comments within a period of 30 days from the date of service of the patent owner's response. This 30-day time period is statutory (35 U.S.C. 314(b)(2)), and, as such, it <u>cannot</u> be extended. See also 37 CFR 1.947.

If an *ex parte* reexamination has been merged with the *inter partes* reexamination, no responsive submission by any *ex parte* third party requester is permitted.

All correspondence relating to this inter partes reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of the communication enclosed with this transmittal.

PTOL-2070 (Rev.07-04)

ORDER GRANTING/DENYING REQUEST FOR INTER PARTES REEXAMINATION	Control No.	Patent Under Reexamination
	95/000,324	6,857,001
	Examiner	Art Unit	
	James Menefee	3992	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

The request for *inter partes* reexamination has been considered. Identification of the claims, the references relied on, and the rationale supporting the determination are attached.

Attachment(s): ☐ PTO-892   ☒ PTO/SB/08   ☐ Other: _____

1. ☒ The request for *inter partes* reexamination is GRANTED.

   ☒ An Office action is attached with this order.

   ☐ An Office action will follow in due course.

2. ☐ The request for *inter partes* reexamination is DENIED.

This decision is not appealable. 35 U.S.C. 312(c). Requester may seek review of a denial by petition to the Director of the USPTO within ONE MONTH from the mailing date hereof. 37 CFR 1.927. EXTENSIONS OF TIME ONLY UNDER 37 CFR 1.183. In due course, a refund under 37 CFR 1.26(c) will be made to requester.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this Order.

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ORDER GRANTING REEXAMINATION REQUEST

A substantial new question of patentability ("SNQ") affecting claims 1-63 of U.S. Patent

No. 6,857,001 ("the '001 patent") is raised by the *inter partes* reexamination request filed

2/8/2008 ("Request"). A first action on the merits accompanies this Order.

References

- Ylonen et al., Concurrent Shadow Paging: Snapshots, Read-Only Transactions, and On-The-Fly Multi-Level Incremental Dumping, TKO-B104, Laboratory of Information Processing Science Helsinki Univ. of Tech., 1993[1] ("Ylonen").

- Hitz et al., File System Design for an NFS File Server Appliance, TR 3002, USENIX, Jan. 19, 1994 ("Hitz").

- Veritas File System 3.4 Administrator's Guide, Nov. 2000 ("VxFS").

- Siddha et al., A Persistent Snapshot Device Driver for Linux, Proc. of the 5th Annual Linux Showcase & Conference, USENIX, Nov. 2001 ("Siddha").

- Sun StorEdge Instant Image 2.0 System Administrator's Guide, Feb. 2000 ("Sun").

- Suresh Babu S, Persistent Snapshots, Indian Inst. of Science, Bangalore, Jan. 2000 ("Siddha Report").

- Czezatke et al., LinLogFS: A Log-Structured File system for Linux, Proc. of FREENIX Track: 2000 USENIX Annual Technical Conference, Jun. 2000, USENIX ("Czezatke").

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[1] The examiner agrees with the Request that, while Ylonen is undated, the other reference to Ylonen (provided in the Request, not cited herein) provides evidence of the date of publication of Ylonen.

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- The Enterprise Challenge Served by Snapshot, LSI Logic Whitepaper, 2001 ("LSI Logic").

- Osorio et al., Guidelines for Using Snapshot Storage Systems for Oracle Databases, Oct. 2001[2] ("Osorio").

- U.S. Patent No. 6,341,341 to Grummon et al. ("Grummon").

- U.S. Patent No. 5,675,802 to Allen et al. ("Allen").

- U.S. Patent No. 6,795,966 to Lim et al. ("Lim").

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[2] The Request lists the date as Aug. 2000, as noted on p. 1 of the reference. The examiner does not agree the reference should be given this date. The reference itself is clearly dated on the cover and at the bottom of each page as Oct. 2001. While, according to page 1, a version was apparently completed in Aug. 2000, there is no indication that this version was ever disseminated to anyone, see generally MPEP 2128, and indeed it is not even apparent what exactly was included in that version. While apparently the Oct. 2001 version revised section 5, the examiner has nothing more than this sentence fragment to determine the extent of what was in the Aug. 2000 version. In light of these factors, as the only evidence provided of any potential dissemination to the public is that of the actually provided Oct. 2001 reference, the examiner will only use the date of the actual reference that is in the record.

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Prosecution History

The '001 patent was filed as application number 10/165,188 on 6/7/2002 and issued

2/15/2005. The patent is drawn to multiple concurrent active file systems. Title. A second file

system is created as a snapshot of the first file system, and the file systems initially share data;

rather than copying data directly to the snapshot, the snapshot simply includes pointers to the

original data, data is shared between them. When data is modified, the original data is then

copied to the snapshot, so that the snapshot maintains a point-in-time image of the data at the

time the snapshot was created. This technique–sharing unmodified data and creating a copy only

when there is a modification–is known in the art as the copy-on-write technique as described in

many of the references cited in this Order. The snapshot may further be made writable; this is

the alleged difference between the '001 patent and the prior art, where snapshots are typically

read-only, and is the crux of the invention, see col. 1 lines 33-43. This is described as having

several advantages as noted in col. 1. Making the snapshot writable provides the second active

file system.

Thus, when changes are made to one of the file systems, the modification of data is

stored in an area not shared with the other file system–when original data is modified, the first

file system gets the modification, while the second file system (snapshot) maintains the original

data via copy-on-write; if the snapshot is modified the change is not shared with the original file

system. In this way, the information in the file systems may diverge, as the modified data in

each will differ from the other, while unmodified data remains shared between them. In the first

action on the merits, the examiner rejected all the claims as anticipated by a reference to

Midgely. In response patent owner amended certain dependent claims, added claims 60-63, and

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traversed the rejections, arguing that Midgely is not drawn to file systems, and further that

Midgely lacked the feature that changes made to one file system are not reflected in the other file

system. The examiner maintained the rejections in a final rejection, including a rejection of the

newly added claims.

In an after-final amendment, patent owner amended some independent claims and argued

against the rejections as to others. In response, the examiner agreed with the patent owner's

remarks and allowed the case, stating the reasons for allowance as the prior art failing to teach

the following limitations:

Independent claims 1, 20, 39, and 58: "wherein changes made to each of the active file

systems are not reflected in the active file system with which the changed active file system

shares the data."

Independent claims 10, 29, 48, 59: "converting the snapshot to a second active file

system by making the snapshot writable, with changes made to the first active file system not

reflected in the second active file system, and with changes made to the second active file system

not reflected in the first active file system."

Independent claim 60: "modifying a first portion of the original non-organizational data

of the first active file system in response to a first active file system access request, resulting in a

modified first portion being part of first modified non-organizational data of the first active file

system; and the snapshot points to the original non-organizational data, the organizational data of

the first active file system point to the first modified non-organizational data of the first filing

system, and the original non-organizational data and the first modified non-organizational data

partially overlap."

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All of the claims share a common theme: the file systems share data, but changes to one

of the active file systems are not reflected in the other active file system. As the examiner stated

that such limitations were not present in the prior art, patents or printed publications that teach

these limitations would have been important to a reasonable examiner in determining the

patentability of the claims.

SNQ Standard

For a SNQ to be present, it is only necessary that (A) the prior art patents and or printed

publications raise a substantial question of patentability as to the claims, i.e. the teaching of the

prior art patents and printed publications is such that a reasonable examiner would consider the

teaching to be important in deciding whether the claim is patentable; it is not necessary for the

prior art to raise a *prima facie* case of unpatentability; and (B) the same question of patentability

has not been decided by the Office in a previous examination of the patent or in a final holding

of invalidity or unenforceability by a federal court.

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Proposed SNQs

The Request indicates that the cited references raise SNQs as follows. See Request pp. 2-3 listing the SNQs. Claim charts are also provided pointing out how the references allegedly meet the claims, and are cited below.

1. Hitz and Ylonen raise a SNQ as to claims 1-63. Request pp. 8-58.

2. VxFS raises a SNQ as to claims 1-63. Request pp. 58-75.

3. Siddha raises a SNQ as to claims 1-63. Request pp. 76-99.

4. Sun raises a SNQ as to claims 1-59. Request pp. 99-112.

5. Siddha Report raises a SNQ as to claims 1-63. Request pp. 112-140.

6. Czezatke raises a SNQ as to claims 1-6, 10-12, 14-15, 20-25, 29-33, 39-44, and 48-52. Request pp. 140-153.

7. LSI Logic raises a SNQ as to claims 1-5, 10-12, 20-24, 29-31, 39-43, and 48-50. Request pp. 154-168.

8. Osorio raises a SNQ as to claims 1-5, 10-12, 20-24, 29-31, 39-43, and 48-50. Request pp. 168-174.

9. Grummon raises a SNQ as to claims 1, 10, 20, 29, 39, and 48. Request pp. 174-176.

10. Allen raises a SNQ as to claims 1, 10, 20, 29, 39, and 48. Request pp. 176-178.

11. Lim raises a SNQ as to claims 1, 10, 20, 29, 39, and 48. Request pp. 178-181.

The examiner <u>does not</u> agree that Issue 10 raises a SNQ. The examiner agrees that the remaining Issues raise a SNQ as to claims 1-63. A discussion of the specifics follows:

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Discussion of the References Pertaining to the Alleged SNQs

Issue 1:[3]

It is agreed that Hitz and Ylonen rase a SNQ as to claims 1-63.

Ylonen describes a database system where snapshots are taken of the database; a snapshot is a transaction consistent copy of the entire database. See section 3. As discussed in section 3.4, the snapshot is a copy-on-write copy of the database; therefore at creation, the snapshot and the original file system point to the same data, i.e. they share data, and when data in the original is modified the old data is first copied; the original will point to the modified data, and the snapshot points to the old data. The copy-on-write process is known in the art. Section 3.4 also describes snapshots as modifiable, and that such modifications will not affect any other copies. Thus, the snapshot is writable, and changes to the snapshot will not be reflected in the original database. Likewise, as the snapshot is a point in time copy-on-write copy of the database, later changes to the original database are not reflected in the snapshot.

Ylonen does not explicitly refer to active file systems, but refers to databases. As discussed in the '001 patent, an active file system is defined–in a section called Lexicography–as "In general . . . a set of data that can be accessed and modified." Both Ylonen's original database and snapshot appear to fit this description and therefore may be deemed active file systems. The Request further provides Hitz to show that the shadow paging technique, which is used in Ylonen, see Title, is often used in databases but can also be used in file systems. Thus, there would appear to be ample evidence that Ylonen's system either describes file systems or alternatively can be used with file systems.

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[3] The Issues are as set forth in the preceding section.

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Ylonen, in light of Hitz, therefore appears to describe a system including multiple active file systems that initially share data and where changes made to one of the file systems are not reflected in the other file system. These are the very features that were deemed to be lacking during the original prosecution of the '001 patent.

Given the above teachings showing that Ylonen and Hitz appear to disclose what was found lacking in the original prosecution, along with the item matching of Ylonen and Hitz to claims 1-63 as provided in the Request, a reasonable examiner would have found Ylonen and Hitz important in considering the patentability of these claims.

The teachings of Ylonen and Hitz discussed herein are not cumulative to any written discussion on the record of the teachings of the prior art, were not previously considered nor addressed during a prior examination, and the same question was not the subject of a final holding of invalidity in the Federal Courts.

Issue 2:

It is agreed that VxFS raises a SNQ as to claims 1-63.

VxFS is a file system, and chapter 8 pp. 81-98 describes storage checkpoints for the file system. The checkpoint creates an image of the file system at a point in time. See p. 82. At creation the checkpoint itself does not include any data, it merely points to the block map of the primary fileset; i.e., it shares data with the primary file system. See p. 83. When the original file system is modified, the original data is copied to the storage checkpoint prior to the modification of the original file system. See pp. 84-85. This is a description of the copy-on-write technique. Thus, changes to the original file system are not reflected in the storage checkpoint. VxFS

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further states that a storage checkpoint can be writable. See p. 86 ("You can . . . write to a Data

Storage Checkpoint just as you would to a file system."). You can write, access, and mount the

Data Storage Checkpoint just as a file system, thus the checkpoint can also be considered an

active file system. See '001 patent col. 4 lines 27-28. VxFS also notes that when a storage

checkpoint is written to, you will lose the original image. See p. 89 ("Caution"). Thus, changes

made by writing to the storage checkpoint are not reflected in the original file system.

VxFS therefore appears to describe a system including multiple active file systems that

initially share data and where changes made to one of the file systems are not reflected in the

other file system. These are the very features that were deemed to be lacking during the original

prosecution of the '001 patent.

Given the above teachings showing that VxFS appears to disclose what was found

lacking in the original prosecution, along with the item matching of VxFS to claims 1-63 as

provided in the Request, a reasonable examiner would have found VxFS important in

considering the patentability of these claims.

The teachings of VxFS discussed herein are not cumulative to any written discussion on

the record of the teachings of the prior art, were not previously considered nor addressed during

a prior examination, and the same question was not the subject of a final holding of invalidity in

the Federal Courts.

Issue 3:

It is agreed that Siddha raises a SNQ as to claims 1-63.

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Siddha describes a file system, section 1, and describes snapshots of the file system, section 1.1. The snapshot is created using a copy-on-write technique; at creation, the snapshot and the original file system point to the same data, i.e. they share data, and when data in the original is modified the original data is first copied; the original will point to the modified data, and the snapshot points to the original data. See section 1.1, Fig. 1. Siddha also describes the snapshot as writable, see section 3.1.3 and Fig. 4; as the snapshot can be read and modified it can be deemed an active file system, see '001 patent col. 4 lines 27-28. Writes to a writable snapshot are written directly to the snapshot, see Siddha section 3.1.3, i.e. they are not written into the original file system. Thus, changes to the original file system are not reflected in the snapshot, and changes in the snapshot are also not reflected in the original file system.

Siddha therefore appears to describe a system including multiple active file systems that initially share data and where changes made to one of the file systems are not reflected in the other file system. These are the very features that were deemed to be lacking during the original prosecution of the '001 patent.

Given the above teachings showing that Siddha appears to disclose what was found lacking in the original prosecution, along with the item matching of Siddha to claims 1-63 as provided in the Request, a reasonable examiner would have found Siddha important in considering the patentability of these claims.

The teachings of Siddha discussed herein are not cumulative to any written discussion on the record of the teachings of the prior art, were not previously considered nor addressed during a prior examination, and the same question was not the subject of a final holding of invalidity in the Federal Courts.

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Issue 4:

It is agreed that Sun raises a SNQ as to claims 1-59.

Sun describes a system including a master volume of original data and a shadow volume that is a copy of the master volume. See p. 1-5. "Once the shadow is created, you can read from and write to this shadow volume—and also the master volume." P. 1-2. Both the shadow and master volumes therefore appear to be active file systems. See '001 patent col. 4 lines 27-28. A dependent shadow volume relies on the master for unmodified data; there is no full copy, or there are not two physical copies of the data. See p. 1-6. In other words, the master and shadow share any unmodified data. The dependent shadow volume is a point in time view that only duplicates data when required, i.e. when the master is modified. See pp. 1-5 to 1-6. When the shadow is written to, it no longer matches the master. See p. 1-6. Thus, changes to the master are not reflected in the shadow, and changes in the shadow are also not reflected in the master.

Sun therefore appears to describe a system including multiple active file systems that initially share data and where changes made to one of the file systems are not reflected in the other file system. These are the very features that were deemed to be lacking during the original prosecution of the '001 patent.

Given the above teachings showing that Sun appears to disclose what was found lacking in the original prosecution, along with the item matching of Sun to claims 1-59 as provided in the Request, a reasonable examiner would have found Sun important in considering the patentability of these claims.

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The teachings of Sun discussed herein are not cumulative to any written discussion on the

record of the teachings of the prior art, were not previously considered nor addressed during a

prior examination, and the same question was not the subject of a final holding of invalidity in

the Federal Courts.

Issue 5:

It is agreed that Siddha Report raises a SNQ as to claims 1-63.

Siddha Report describes a file system, Ch. 1 Introduction, and describes snapshots of the

file system, section 1.1. The snapshot is created using a copy-on-write technique; at creation, the

snapshot and the original file system point to the same data, i.e. they share data, and when data in

the original is modified the original data is first copied; the original will point to the modified

data, and the snapshot points to the original data. See section 1.1, Fig. 1.2. Siddha Report also

describes the snapshot as writable, see section 2.1.3 and Fig. 2.3; as the snapshot can be read and

modified it can be deemed an active file system, see '001 patent col. 4 lines 27-28. Writes to a

writable snapshot are written directly to the snapshot, see Siddha Report section 2.1.3, i.e. they

are not written into the original file system. Thus, changes to the original file system are not

reflected in the snapshot, and changes in the snapshot are also not reflected in the original file

system.

Siddha Report therefore appears to describe a system including multiple active file

systems that initially share data and where changes made to one of the file systems are not

reflected in the other file system. These are the very features that were deemed to be lacking

during the original prosecution of the '001 patent.

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Given the above teachings showing that Siddha Report appears to disclose what was found lacking in the original prosecution, along with the item matching of Siddha Report to claims 1-63 as provided in the Request, a reasonable examiner would have found Siddha Report important in considering the patentability of these claims.

The teachings of Siddha Report discussed herein are not cumulative to any written discussion on the record of the teachings of the prior art, were not previously considered nor addressed during a prior examination, and the same question was not the subject of a final holding of invalidity in the Federal Courts.

Issue 6:

It is agreed that Czezatke raises a SNQ as to claims 1-6, 10-12, 14-15, 20-25, 29-33, 39-44, and 48-52.

Czezatke describes a file system, Title, and also mentions the use of writable snapshots, section 1. Czezatke describes a copy-on-write technique where new data does not overwrite original data; the change is instead written elsewhere, and the original data is left as is, while unchanged data remains shared. Section 2.2. A snapshot or clone shares data with its parent file system; as a snapshot is a point in time image, changes in the file system will not be present in the clone. Changes in the clone are also not reflected in the parents. See section 3.3 (discussing tracking of changes).

Czezatke therefore appears to describe a system including multiple active file systems that initially share data and where changes made to one of the file systems are not reflected in the

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other file system. These are the very features that were deemed to be lacking during the original

prosecution of the '001 patent.

Given the above teachings showing that Czezatke appears to disclose what was found

lacking in the original prosecution, along with the item matching of Czezatke to claims 1-6, 10-

12, 14-15, 20-25, 29-33, 39-44, and 48-52 as provided in the Request, a reasonable examiner

would have found Czezatke important in considering the patentability of these claims.

The teachings of Czezatke discussed herein are not cumulative to any written discussion

on the record of the teachings of the prior art, were not previously considered nor addressed

during a prior examination, and the same question was not the subject of a final holding of

invalidity in the Federal Courts.

Issue 7:

It is agreed that LSI Logic raises a SNQ as to claims 1-5, 10-12, 20-24, 29-31, 39-43, and

48-50.

LSI Logic describes a storage system and describes snapshots taken of the system. See p.

2. The snapshot is created using a copy-on-write technique, see p. 3, thus at creation the

snapshot and the original file system point to the same data, i.e. they share data. Both the

original volume and the snapshot can be accessed and modified, see p. 2, therefore each can be

deemed an active file system, see '001 patent col. 4 lines 27-28. When the snapshot is written to,

it overwrites the point in time image with the change, see p. 4, therefore the changes to the

snapshot will not be reflected in the original disk. Similarly, as a snapshot is a point in time

image, it will not reflect changes that are made at a different time. Thus, changes to the original

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file system are not reflected in the snapshot, and changes in the snapshot are also not reflected in

the original file system.

LSI Logic therefore appears to describe a system including multiple active file systems

that initially share data and where changes made to one of the file systems are not reflected in the

other file system. These are the very features that were deemed to be lacking during the original

prosecution of the '001 patent.

Given the above teachings showing that LSI Logic appears to disclose what was found

lacking in the original prosecution, along with the item matching of LSI Logic to claims 1-5, 10-

12, 20-24, 29-31, 39-43, and 48-50 as provided in the Request, a reasonable examiner would

have found LSI Logic important in considering the patentability of these claims.

The teachings of LSI Logic discussed herein are not cumulative to any written discussion

on the record of the teachings of the prior art, were not previously considered nor addressed

during a prior examination, and the same question was not the subject of a final holding of

invalidity in the Federal Courts.

Issue 8:

It is agreed that Osorio raises a SNQ as to claims 1-5, 10-12, 20-24, 29-31, 39-43, and

48-50.

Osorio describes snapshot storage technology used with databases. See p. 3. The

snapshot may be created using a copy-on-write technique; at creation, the snapshot and the

original point to the same data, i.e. they share data, and when data in the original is modified the

original data is first copied; the original will point to the modified data, and the snapshot points

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to the original data. See p. 4. Osorio also describes the snapshot as writable, as it is essentially a

new database started with a copy of the original. See p. 7. Both the snapshot and the original

database are collections of data that can be read and modified and therefore can be deemed an

active file system, see '001 patent col. 4 lines 27-28. It is also noted that the second instance, i.e.

the snapshot, is totally independent from and other database, therefore any changes in either the

snapshot or the original will not be reflected in the other.

Osorio therefore appears to describe a system including multiple active file systems that

initially share data and where changes made to one of the file systems are not reflected in the

other file system. These are the very features that were deemed to be lacking during the original

prosecution of the '001 patent.

Given the above teachings showing that Osorio appears to disclose what was found

lacking in the original prosecution, along with the item matching of Osorio to claims 1-5, 10-12,

20-24, 29-31, 39-43, and 48-50 as provided in the Request, a reasonable examiner would have

found Osorio important in considering the patentability of these claims.

The teachings of Osorio discussed herein are not cumulative to any written discussion on

the record of the teachings of the prior art, were not previously considered nor addressed during

a prior examination, and the same question was not the subject of a final holding of invalidity in

the Federal Courts.

Issue 9:

It is agreed that Grummon raises a SNQ as to claims 1, 10, 20, 29, 39, and 48.

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Grummon describes a file system and snapshots taken of the file system. See Fig. 3; col.

6 line 66 – col. 7 line 63. The snapshot is created using a copy-on-write technique; therefore, at

creation, the snapshot and the original file system point to the same data, i.e. they share data, and

when data in the original is modified the original data is first copied; the original will point to the

modified data, and the snapshot points to the original data. The copy-on-write process is known

in the art, and also described at col. 3 lines 5-23. Grummon also describes the snapshot as

writable, see col. 4 lines 23-26; as the both the snapshot and the readable container are sets of

data that can be read and modified, they each can be deemed an active file system, see '001

patent col. 4 lines 27-28. As in the typical copy-on-write, writes to the original are not reflected

in the snapshot. The bit map determines whether data is mapped to the original container or to

the snapshot, see col. 7 lines 25-33; because it makes this distinction, it appears that writes by the

snapshot are not reflected in the original. Thus, changes to the original file system are not

reflected in the snapshot, and changes in the snapshot are also not reflected in the original file

system.

Grummon therefore appears to describe a system including multiple active file systems

that initially share data and where changes made to one of the file systems are not reflected in the

other file system. These are the very features that were deemed to be lacking during the original

prosecution of the '001 patent.

Given the above teachings showing that Grummon appears to disclose what was found

lacking in the original prosecution, along with the item matching of Grummon to claims 1, 10,

20, 29, 39, and 48 as provided in the Request, a reasonable examiner would have found

Grummon important in considering the patentability of these claims.

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The teachings of Grummon discussed herein are not cumulative to any written discussion

on the record of the teachings of the prior art, were not previously considered nor addressed

during a prior examination, and the same question was not the subject of a final holding of

invalidity in the Federal Courts.

Issue 10:

It is _not_ agreed that Allen raises a SNQ as to claims 1, 10, 20, 29, 39, and 48.

Allen describes a system for geographically distributed software development, allowing

different lines of development to proceed in parallel at different sites.   As shown in Fig. 2,

described at col. 6 lines 16-58, there is a file system for viewing selected versions of files stored

in a versioned object base (VOB). The VOB is a shared resource that includes data accessible by

all developers, and includes current and historical versions of the files being developed, as well

as other data. A user can view the files on the VOB via the virtual workstation, without copying

versions into her physical workspace.

As shown in Fig. 1, described at col. 5 line 16 - col. 6 line 15, a user has access to all of

the VOBs through her local workstation's mastership enforcer. An exporter 38 and importer 40

prepare copies of new versions of files to be sent to and from replicas at remote development

sites.

It should be noted that while the VOB is described as a shared resource, and is indeed

accessible at the various development sites, there is not an actual sharing of physical data.

Instead, data is copied from the VOB as a replica to the local machine where the user performs

her work. See abstract ("The storage device stores a _local replica_ including a plurality of files;"

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also describing that the exchanger imports and exports data between the local replica and remote

replicas); col. 8 lines 16-22 (describing that each site working on the same particular code has a

VOB replica). Thus, a VOB is a shared resource, but physical data is not shared, each site

merely gets a replica of the data when it is to be worked upon.

Allen further describes branches in Fig. 3, described at col. 6 line 59 – col. 7 line 55. The

figure shows multiple branches of development of a file 52 at a local site, with each bubble 56

showing a separate version of the file. The Request alleges that this disclosure teaches the initial

sharing of data between the branches, where the branches diverge over time and therefore

changes in a branch are not reflected in another branch. See Request p. 7 ("Allen further teaches

"branching" of the file trees, with each of the branches undergoing independent evolution from

parent and sister branches. Col. 6:59-7:22, Fig. 3. As shown in Fig. 3, a branch initially shares

data with the parent, but diverges over time, with changes not shared with the other branches.

Therefore, Allen teaches plural active file trees, wherein changes made to each file tree are not

reflected in the file trees with which the first tree initially shares data. Thus, Allen raises an SNQ

with respect to at least claim 1 of the '001 patent.") (this material is also repeated in the claim

charts). The examiner disagrees with this assessment of the branches.

First, there is no indication or explicit discussion that the branches ever share physical

data, thus all the examiner can go on is the interpretation of the reference. The Requester's

assertion that the branches share data is not well taken. Each bubble 56 in Fig. 3 is a distinct

version of the file that is its own distinct piece of data that can be accessed. Thus 0 in MAIN

differs from 0 in PORT and differs from 0 in BUG_FIXES; they are not the same physical data

that is shared. Further, the branches, do not "share" data with the parent branch. It is clear, as

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noted by the labels 58 (denoting "branches"), that each branch consists of its distinct vertical

collection of bubbles; PORT is the left 0 to 3, MAIN is the middle 0 to 6, and BUG_FIXES is

the right 0 to 3. PORT is not 0-1-2-3-0-1-2, it does not start until it is branched off with the left

most 0. This is reinforced because each branch is restarted with the number 0; if PORT were

considered to "share" the earlier versions of MAIN, it might have been started with a label such

as 4', or something to the effect to indicate that it was not a separate and distinct branch, rather

than 0.   Further, there is no discussion of pointers, or anything to the effect that branches such as

PORT share data with branches such as MAIN by pointing to the data contained in MAIN; in the

'001 patent the sharing of data was accomplished by the snapshot pointing to the unmodified

data included in the original file system. While such pointers are not claimed and are not read

into the claims as a requirement of sharing data, they are yet another indication of sharing data

that is not present in Allen.

As described above, the important limitations regarding patentability of the claims were

the sharing of data among plural active file systems, where changes to any one of the file systems

are not reflected in the other file system with which it shares the data. It is clear from the '001

patent that this "sharing" of data does not merely mean that the file systems have the same

elements of data; we are not just talking about copies of the same data, but instead are dealing

with sharing the same physical data that is stored. "After snapshot root inode 140 has been

created, snapshot 130 and file system 100 actually share data on the storage device or devices.

Thus, snapshot 130 preferably includes the same physical data 120 on the storage device or

devices as file system 10 . . . . In other words, the snapshot and the file system overlap. This

allows for rapid creation of snapshot 130 with efficient use of storage space and other system

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resources." '001 patent, Col. 5 lines 9-17. Further, "to share" denotes plural parties using the

same physical thing, and not merely having something in common.

In Allen, on the other hand, the plural active file systems, if the branches are to be

considered as such, do not share data for the reasons described above. Further, the VOB, while a

shared resource, is replicated at the remote sites so that its replica can be worked upon; it is only

the replicas that diverge over time, and the replicas cannot be considered to be shared data.

Allen therefore does not teach the sharing of data among plural active file systems, where

changes to any one of the file systems are not reflected in the other file system with which it

shares the data–the limitations important to the patentability of the claims in the original

prosecution; Allen therefore would not have been important to a reasonable examiner in

determining the patentability of the claims, and no SNQ is raised by Allen.

Issue 11:

It is agreed that Lim raises a SNQ as to claims 1, 10, 20, 29, 39, and 48.

Lim describes a computer system state checkpoint mechanism. See Title. The system

periodically takes checkpoints, i.e. snapshots, of the system state so that the system can later be

restored to that state. See abstract. Note that Lim describes the terms checkpoints and snapshots

as interchangeable. Col. 2 lines 40-41; col. 3 lines 31-32. Various systems may be loaded with a

common checkpoint that serves as the basis for more than one set of transactions, forming a

checkpoint tree. It is noted that changes to the checkpoints may be done with a copy-on-write

technique, therefore the various checkpoints may share data that is the same. As users perform

different operations on the different checkpoints, new system states will result that will differ

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from one another; in this way the changes to the different checkpoints will not be reflected in the

other checkpoints. See Fig. 5, cols. 20-21. Note that checkpoints are stored as state vectors;

thus, they are a collection of data that may be accessed and modified. They therefore may be

considered an active file system, see '001 patent col. 4 lines 27-28.

Lim therefore appears to describe a system including multiple active file systems that

share data and where changes made to one of the file systems are not reflected in the other file

system. These are the very features that were deemed to be lacking during the original

prosecution of the '001 patent.

Given the above teachings showing that Lim appears to disclose what was found lacking

in the original prosecution, along with the item matching of Lim to claims 1, 10, 20, 29, 39, and

48 as provided in the Request, a reasonable examiner would have found Lim important in

considering the patentability of these claims.

The teachings of Lim discussed herein are not cumulative to any written discussion on

the record of the teachings of the prior art, were not previously considered nor addressed during

a prior examination, and the same question was not the subject of a final holding of invalidity in

the Federal Courts.

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NOTICE RE PATENT OWNER'S CORRESPONDENCE ADDRESS

Effective May 16, 2007, 37 CFR 1.33(c) has been revised to
provide that:

The patent owner's correspondence address for all communications
in an *ex parte* reexamination or an *inter partes* reexamination is
designated as the correspondence address of the patent.

> *Revisions and Technical Corrections Affecting*
> *Requirements for Ex Parte and Inter Partes*
> *Reexamination*, 72 FR 18892 (April 16, 2007)(Final
> Rule)

The correspondence address for any pending reexamination
proceeding not having the same correspondence address as that of
the patent is, by way of this revision to 37 CFR 1.33(c),
automatically changed to that of the patent file as of the
effective date.

This change is effective for any reexamination proceeding which
is pending before the Office as of May 16, 2007, including the
present reexamination proceeding, and to any reexamination
proceeding which is filed after that date.

Parties are to take this change into account when filing papers,
and direct communications accordingly.

In the event the patent owner's correspondence address listed in
the papers (record) for the present proceeding is different from
the correspondence address of the patent, it is strongly
encouraged that the patent owner affirmatively file a
Notification of Change of Correspondence Address in the
reexamination proceeding and/or the patent (depending on which
address patent owner desires), to conform the address of the
proceeding with that of the patent and to clarify the record as
to which address should be used for correspondence.

Telephone Numbers for reexamination inquiries:

Reexamination and Amendment Practice   (571) 272-7703
Central Reexam Unit (CRU)   (571) 272-7705
Reexamination Facsimile Transmission No.   (571) 273-9900

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Conclusion

All correspondence relating to this *inter partes* reexamination proceeding should be directed:

By **U.S. Postal Service Mail** to:
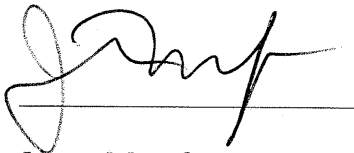
    Mail Stop *Inter Partes* Reexam
    ATTN: Central Reexamination Unit
    Commissioner for Patents
    P.O. Box 1450
    Alexandria, VA 22313-1450

By FAX to: (571) 273-9900
               Central Reexamination Unit

By hand to: Customer Service Window
               Randolph Building
               401 Dulany St.
               Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the

Reexamination Legal Advisor or Examiner, or as to the status of this proceeding, should be

directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:

James Menefee
Primary Examiner
Central Reexamination Unit 3992
(571) 272-1944

April 2, 2008

Conferees:

PTO/SB/08a (11-07)
Approved for use through 11/30/2007. OMB 0651-0031
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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

	Complete if Known
Patent Number	6,857,001
Issue Date	February 15, 2005
First Named Inventor	Hitz et al.
Art Unit	N/A
Examiner Name	N/A

Sheet	1	of	2	Attorney Docket Number	347155-29

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 6,341,341	01-22-2002	Grummon et al.	
		US- 5,675,802	10-07-1997	Allen et al.	
		US- 6,795,966	09-21-2004	Lim et al.	
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] "Number[4]" "Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

Examiner Signature	/James Menefee/	Date Considered	04/02/2008

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1]Applicant's unique citation designation number (optional). [2]See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3]Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4]For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6]Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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347155-29

extra material lined through so that only the reference citation is listed on the face of the certificate

Substitute for form 1449B/PTO		**Complete if Known**	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(Use as many sheets as necessary)*		Patent Number	6,857,001
		Issue Date	February 15, 2005
		First Named Inventor	Hitz et al.
		Art Unit	N/A
		Examiner Name	N/A

Sheet	2	of	2	Attorney Docket Number	347155-29

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
		Hitz et. al, *File System Design For An NFS File Server Appliance*, TR3002, USENIX January 19, 1994 ~~(hereinafter: "Hitz")~~.	
		Ylonen et. al, *Concurrent Shadow Paging: Snapshots, Read-Only Transactions, and On-The-Fly Multilevel Incremental Dumping*, TKO-B104, Laboratory of Information Processing Science at Helsinki University of Technology, 1993 ~~(hereinafter: "Ylonen"). Although this document is undated on its face, it is referenced in Ylonen et. al, Concurrent Shadow Paging: Fine-Granularity Locking with Support for Extended Lock Modes and Early Releasing of Locks, Laboratory of Information Processing Science at Helsinki University of Technology (see Footnote [17], page 28), as being published in 1993.~~	
		Veritas File System 3.4 Administrator's Guide, November 2000 ~~("VxFS")~~.	
		S. B. Siddha, K. Gopinath, *A Persistent Snapshot Device Driver for Linux*, Proceedings of the 5th Annual Linux Showcase & Conference, USENIX, Nov. 5-10, 2001 ~~(hereinafter: "Siddha")~~.	
		S. B. Siddha, *Persistent Snapshots*, A Project Report Submitted in partial fulfillment of the requirement for the Degree of Master of Engineering in Computer Science and Engineering, Indian Institute of Science, January, 2000 ~~(hereinafter: "Siddha Report")~~.	
		Sun StorEdge Instant Image 2.0 System Administrator's Guide, February 2000 ~~(hereinafter: "Sun")~~.	
		C. Czezatke, M. Anton Ertl, *LinLogFS – A log-structured Filesystem For Linux*, Proceedings of FREENIX Track: 2000 USENIX Annual Technical Conference, June 18-23, 2000 ~~(hereinafter: "Czezatke")~~.	
		The Enterprise Challenge Served By Snapshot, LSI Logic Whitepaper, 2001 ~~(hereinafter: "LSI Logic Whitepaper")~~.	
		N. Osorio and B. Lee, *Guidelines for Using Snapshot Storage Systems for Oracle Databases*, ~~version 1 dated August 28, 2000 (hereinafter: "Osorio")~~. Oct. 2001	

Examiner Signature	/James Menefee/	Date Considered	04/02/2008

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.
[1] Applicant's unique citation designation number (optional). [2] Applicant is to place a check mark here if English language Translation is attached.
This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /JM/

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OFFICE ACTION IN INTER PARTES REEXAMINATION	Control No. 95/000,324	Patent Under Reexamination 6,857,001	
	Examiner James Menefee	Art Unit 3992	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

Responsive to the communication(s) filed by:
Patent Owner on _____
Third Party(ies) on _____

RESPONSE TIMES ARE SET TO EXPIRE AS FOLLOWS:

For Patent Owner's Response:
     2 MONTH(S) from the mailing date of this action. 37 CFR 1.945. EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.956.
For Third Party Requester's Comments on the Patent Owner Response:
     30 DAYS from the date of service of any patent owner's response. 37 CFR 1.947. NO EXTENSIONS OF TIME ARE PERMITTED. 35 U.S.C. 314(b)(2).

All correspondence relating to this inter partes reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this Office action.

This action is not an Action Closing Prosecution under 37 CFR 1.949, nor is it a Right of Appeal Notice under 37 CFR 1.953.

PART I. THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892
2. ☐ Information Disclosure Citation, PTO/SB/08
3. ☐ _____

PART II. SUMMARY OF ACTION:

1a. ☒ Claims 1-63 are subject to reexamination.
1b. ☐ Claims _____ are not subject to reexamination.
2. ☐ Claims _____ have been canceled.
3. ☐ Claims _____ are confirmed. [Unamended patent claims]
4. ☐ Claims _____ are patentable. [Amended or new claims]
5. ☒ Claims 1-63 are rejected.
6. ☐ Claims _____ are objected to.
7. ☐ The drawings filed on _____   ☐ are acceptable   ☐ are not acceptable.
8. ☐ The drawing correction request filed on _____ is: ☐ approved. ☐ disapproved.
9. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119 (a)-(d). The certified copy has:
        ☐ been received.   ☐ not been received.   ☐ been filed in Application/Control No 95000324.
10. ☐ Other _____

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INTER PARTES REEXAMINATION OFFICE ACTION

This is an *inter partes* reexamination of U.S. Patent No. 6,857,001 (herein "the '001 patent"). In the attached Order Granting Reexamination, the examiner found a substantial new question of patentability was raised as to claims 1-63 of the '001 patent. The examiner found a SNQ was raised by all of the proposals in the Request except for the proposed rejections based on Allen (Issue 10 as in the Order).

References Cited in Request

- Ylonen et al., Concurrent Shadow Paging: Snapshots, Read-Only Transactions, and On-The-Fly Multi-Level Incremental Dumping, TKO-B104, Laboratory of Information Processing Science Helsinki Univ. of Tech., 1993 ("Ylonen").

- Hitz et al., File System Design for an NFS File Server Appliance, TR 3002, USENIX, Jan. 19, 1994 ("Hitz").

- Veritas File System 3.4 Administrator's Guide, Nov. 2000 ("VxFS").

- Siddha et al., A Persistent Snapshot Device Driver for Linux, Proc. of the 5th Annual Linux Showcase & Conference, USENIX, Nov. 2001 ("Siddha").

- Sun StorEdge Instant Image 2.0 System Administrator's Guide, Feb. 2000 ("Sun").

- Suresh Babu S, Persistent Snapshots, Indian Inst. of Science, Bangalore, Jan. 2000 ("Siddha Report").

- Czezatke et al., LinLogFS: A Log-Structured Filesystem for Linux, Proc. of FREENIX Track: 2000 USENIX Annual Technical Conference, Jun. 2000, USENIX ("Czezatke").

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- The Enterprise Challenge Served by Snapshot, LSI Logic Whitepaper, 2001 ("LSI

  Logic").

- Osorio et al., Guidelines for Using Snapshot Storage Systems for Oracle Databases, Oct.

  2001 ("Osorio").

- U.S. Patent No. 6,341,341 to Grummon et al. ("Grummon").

- U.S. Patent No. 5,675,802 to Allen et al. ("Allen").

- U.S. Patent No. 6,795,966 to Lim et al. ("Lim").

See the Order for discussion of the dates of Ylonen and Osorio.

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Extensions of Time

Extensions of time under 37 CFR 1.136(a) will not be permitted in *inter partes*

reexamination proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant"

and not to the patent owner in a reexamination proceeding. Additionally, 35 U.S.C. 314(c)

requires that *inter partes* reexamination proceedings "will be conducted with special dispatch"

(37 CFR 1.937). Patent owner extensions of time in *inter partes* reexamination proceedings are

provided for in 37 CFR 1.956. Extensions of time are not available for third party requester

comments, because a comment period of 30 days from service of patent owner's response is set

by statute. 35 U.S.C. 314(b)(3).

Notification of Other Proceedings

The patent owner is reminded of the continuing responsibility under 37 CFR 1.985(a), to

apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving the

'001 patent throughout the course of this reexamination proceeding. The third party requester is

also reminded of the ability to similarly apprise the Office of any such activity or proceeding

throughout the course of this reexamination proceeding. See MPEP § 2686 and 2686.04.

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Lexicography

It is well settled that an applicant may be his own lexicographer, and that when an

applicant defines a term in the specification that definition will control claim construction. See

MPEP 2111.01 IV. Patent owner did precisely this in the '001 patent, including a section called

"Lexicography" and listing definitions for a number of terms. See col. 3 line 53 – col. 4 line 43.

Patent owner further stated "[T]hese descriptions of general meanings of these terms are not

intended to be limiting, only illustrative. Other and further applications of the invention,

including extensions of these terms and concepts, would be clear to those of ordinary skill in the

art after perusing this application. These other and further applications are part of the scope and

spirit of the invention . . . ." Col. 4 lines 35-41. Thus, it is apparent that while patent owner may

not have intended his definitions to limit the invention, he intended such terms to include at least

his listed definitions (along with perhaps "extensions of these terms and concepts"). In other

words, patent owner intended with his "illustrative" definitions that these terms be construed at

least as broadly as in the listed definitions, that such terms would encompass his listed definition

in addition to any extensions deemed appropriate by a person of ordinary skill in the art.

The examiner therefore construes the claims with the above observations in mind: the

defined terms are deemed to encompass at least the definition used in the Lexicography section.

By explicitly setting forth a lexicography section in the specification, and by explicitly stating

that the definitions in this section are not limiting but instead are illustrative and the terms could

encompass even more than the provided definition, patent owner has put a person of ordinary

skill in the art on notice as to the intended breadth of such terms when used in the claims. This

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lexicography section further provides the reasonable clarity, deliberateness, and precision to

show patent owner has intended to be his own lexicographer in describing these terms.

Statutory Basis - 35 USC § 102 & 103

The anticipation and obviousness discussions herein are based on the following statutory

sections.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the anticipation rejections made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness discussions set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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Requester's Proposed Rejections

Issue 1:[1]

Claims 1-63 are rejected under 35 U.S.C. 102(b) as being anticipated by Ylonen.

It is noted the claims require "active file systems," see, e.g., claim 1; Ylonen does not explicitly use this term, referring instead to databases, but Ylonen does teach active file systems. Both the base database and snapshot database of Ylonen are sets of data that can be accessed and modified. See section 3.4 (noting snapshot is modifiable). These databases can therefore be deemed active file systems as the term is defined in the '001 patent, see col. 4 lines 27-28.

In light of this, the use of Hitz as described in the proposed rejection is unnecessary. The Request cited Hitz as follows: "Author David Hitz, also one of the named inventors of the '001 Patent, admits in section 3.5 (page 12) that copy-on-write snapshot techniques implemented in the WAFL file system, the preferred embodiment of the '001 Patent, are well known for databases. Thus, as a matter of claim construction, one of ordinary skill in the art would understand that "file system," as claimed in the '001 patent, includes "databases," and the claim is anticipated by Ylonen with the admission of the named inventor." E.g., Request p. 9.

First, it is not clear to the examiner that a reference published nine years prior to the filing of the patent, where only one of the three authors is common with one of the three named inventors of the patent, is sufficient to be deemed "an admission" by the patent owner. MPEP 2617 III. does give some credence to the proposition that admissions may be found in "printed publications or some other source," but the examiner does not find a need to decide whether

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[1] The Issues are as listed in the Request pp. 2-3 and as discussed in the Order Granting the Request.

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Hitz's statement is properly an admission because the statement is not saying what the Request

alleges.

The Request alleges that the statements by Hitz show that a database is a file system. The

examiner disagrees that Hitz says this; the relevant statement at page 12 of Hitz is: "Although

this [shadow paging] technique is unusual for a UNIX file system, it is well known for

databases." All this is saying is that a technique known as used with databases is now being used

with a file system in Hitz; there is nothing to indicate that a database actually *is* a file system.[2]

The examiner therefore does not rely on Hitz to provide the Requester's proposed claim

construction that a database is a file system. In any event, as described in the Lexicography

section, *supra*, patent owner has given the term "file system" a broad, non-limiting, illustrative

definition, and Ylonen's databases are encompassed by this definition. Any reliance of the so-

called admission in Hitz is therefore deemed unnecessary.

The rejections of these claims were proposed by the Requester and <u>are adopted</u> for

substantially the reasons set forth in the Request (in light of the observations noted above, i.e.

they are adopted to the extent they rely on Ylonen). See Request pp. 8-58, which are hereby

incorporated by reference, except that the references to Hitz are not relied upon.

The proposed rejection of claims 1-63 under 35 U.S.C. 103(a) as being unpatentable over

Ylonen in view of Hitz is <u>not adopted</u>. The Request in the claim chart, *see, e.g.*, p. 9, states that

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[2] Note the examiner's finding that *Hitz* does not require a database to be a file system does not defeat the examiner's finding herein that the *specification* of the '001 patent allows for this; this is so even as Hitz appears to refer to file systems and databases as different things. As described in MPEP 2111.01 IV., when applicant defines a term with reasonable clarity so that persons of ordinary skill in the art are on notice of the intended definition–as was done here–applicant's definition controls even to the extent it might not be totally consistent with the prior art.

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even if Ylonen is not found to anticipate the claims, then alternatively Ylonen and Hitz render

the claims obvious.

This rejection is not adopted because the Request provides no rationale whatsoever for

combining the references. The Request merely states: "Alternatively, one of ordinary skill in the

art would readily appreciate that the database snapshots taught in Ylonen can be implemented in

file system snapshots taught in Hitz." See, e.g., Request p. 9. This same sentence is copied

throughout, and is the only discussion in the Request as to how the combination of Ylonen and

Hitz renders the claims obvious. The Federal Circuit has stated that "rejections on obviousness

cannot be sustained with mere conclusory statements; instead, there must be some articulated

reasoning with some rational underpinning to support the legal conclusion of obviousness." In re

Kahn, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) (quoted with approval in

KSR International Co. v. Teleflex Inc., 550 U.S. ___, 82 USPQ2d 1385, 1396 (2007)). As the

Request has provided nothing more than a conclusion that the references support an obviousness

determination the proposed rejection cannot stand. Further, the examiner does not provide his

own obviousness rejection. The only part of Hitz that potentially supports their combination is a

single sentence on p. 12: "Although this [shadow paging] technique is unusual for a UNIX file

system, it is well known for databases." It is not apparent to the examiner how this single

sentence supports an obviousness determination. In any event, an obviousness rejection is

deemed unnecessary given the definition of file system described in the '001 patent and the

anticipation rejection provided above.

    Issue 2:

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Claims 1-63 are rejected under 35 U.S.C. 102(b) as being anticipated by VxFS.

It is noted that many of the claims of the '001 patent refer to "snapshots." See, e.g.,

claim 10. A Storage Checkpoint of VxFS is deemed to be a snapshot in the same sense as in the

'001 patent, as it is a complete point in time image of the file system. See p. 86 (Data Storage

Checkpoints). It is a valid system image of the file system, i.e. it is self-consistent and therefore

at a consistency point, and is a written record of the data in the file system. The Storage

Checkpoint is therefore consistent with the definition of snapshot as provided in the '001 patent.

See '001 patent col. 4 lines 10-26. While VxFS contrasts Storage Checkpoints with snapshots,

see p. 82, the examiner understands a Storage Checkpoint to be not a totally different entity than

a snapshot, but instead is in actuality an improved type of snapshot, as it falls under the snapshot

definition in the '001 patent and as it improves on conventional snapshots in a similar way as the

snapshots of the '001 patent (e.g. by making them writable).

The rejections of these claims were proposed by the Requester and are adopted for the

reasons set forth in the Request (in light of the observations noted above). See Request pp. 58-

75, which are hereby incorporated by reference.

Issue 3:

Claims 1-63 are rejected under 35 U.S.C. 102(a) as being anticipated by Siddha.

The rejections of these claims were proposed by the Requester and are adopted for the

reasons set forth in the Request. See Request pp. 76-99, which are hereby incorporated by

reference.

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Issue 4:

Claims 1-4, 10-15, 20-23, 29-34, 39-42, 48-53, and 58-59 are rejected under 35

U.S.C. 102(b) as being anticipated by Sun.

It is noted the claims require "active file systems," see, e.g., claim 1, and some claims

require "snapshots," see, e.g., claim 10; Sun does not explicitly use these terms, but Sun does

teach these elements. Both the master and shadow volumes of Sun are sets of data that can be

accessed and modified. See p. 1-2 ("[Y]ou can read from and write to this shadow volume–and

also the master volume."). These volumes can therefore be deemed active file systems as the

term is defined in the '001 patent, see col. 4 lines 27-28. Sun also discloses that a dependent

shadow volume is a point in time image of the master that is created by a copy-on-write

technique (again, not explicitly named but this is the technique described). See pp. 1-5 to 1-6.

This is essentially how a snapshot is described in the '001 patent. Furthermore, the shadow

volume is a valid system image of the master, i.e. it is self-consistent and therefore at a

consistency point, and is a written record of the data in the master. The shadow volume is

therefore consistent with the definition of snapshot as provided in the '001 patent. See '001

patent col. 4 lines 10-26.

The rejections of these claims were proposed by the Requester and are adopted for the

reasons set forth in the Request (in light of the observations noted above). See Request pp. 99-

112, which are hereby incorporated by reference (for the rejected claims only).

The proposed rejections of claims 5-9, 16-19, 24-28, 35-38, 43-47, and 54-57 as being

anticipated by Sun are not adopted.

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Regarding claims 5, 24, and 43, the claims require "wherein snapshots are made of ones

of the plural active file systems, each snapshot forming an image of its respective active file

system at a past consistency point." The Request alleges that Sun meets this limitation because

"Once the shadow volume is mounted, it can be treated as a master and have its own point-in-

time shadow volumes, equivalent to a snapshot." See e.g., Request pp. 100-101. The Request

does not cite to any portion of Sun for this proposition, and the examiner disagrees that Sun

teaches this feature.

First, it must be noted that the claims require snapshots are made of ones of the plural

active file systems; in Sun, the active file systems are met by the master and shadow volumes as

described in the rejection of claim 1, therefore there must be a snapshot made of one of the

master and shadow volumes to meet these limitations. Furthermore, this snapshot must be in

addition to the shadow volume; as noted above, the dependent shadow volume is considered a

snapshot in rejecting claim 10. For the purposes of claims 5, 24, and 43, however, the shadow

volume cannot be considered the claimed snapshot; this is because in these claims, the shadow

volume is already used to meet the limitation of the parent claims (e.g. claim 1) as one of the

plural active file systems. The shadow volume cannot be both the active file system of claim 1

and then also the snapshot of claim 5. Thus, to meet the limitations of claims 5, 24, and 43, there

must be an additional snapshot made of one of the master and shadow volumes.

As mentioned above, the Request alleges that the limitation is indeed met because the

shadow volume can be treated as a master and can have its own shadow volumes, which can then

be considered snapshots. As mentioned, however, the Request does not cite to any section of

Sun that actually discloses this, and the examiner has not found this teaching in Sun. There is no

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suggestion in Sun that a shadow volume can have its own shadows, or even that a master volume

can have multiple shadows. The only indication is that the master and shadow occur in pairs in a

volume set—that a master may have just one shadow, and that a shadow is associated with a

master but does not have its own shadows. As the Request has not pointed to a section of Sun

that teaches this feature, and has provided no rationale why it may be inherent, the examiner

declines to make the proposed anticipation rejection of these claims.

Regarding claims 6-9, 25-28, and 44-47, the claims depend from one of claims 5, 24, and

43, and therefore the proposed rejections are not adopted for the same reasons.

Regarding claims 16, 18, 35, 37, 54, and 56, the claims require making a new snapshot of

either the first or second active file system. Sun fails to meet this limitation for similar reasons

as described above with regard to claims 5, 24, and 43. To reject the parent claims, for example

claim 10, the master volume of Sun is the "first" active file system and the shadow volume is the

"second" active file system. Thus, to meet claims 16, 18, 35, 37, 54, and 56, Sun would require

an additional snapshot of either of the master or shadow volumes. Sun, however, lacks this

feature. As described above as to claims 5, 24, and 43, Sun does not disclose that the master can

have additional shadows or that a shadow can have a shadow. Thus, there is no "new snapshot"

as required by these claims, and the examiner therefore does not make the proposed anticipation

rejection of these claims.

Regarding claims 17, 19, 36, 38, 55, and 57, the claims depend from one of the above

claims, and therefore the proposed rejections are not adopted for the same reasons.

Issue 5:

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Claims 1-63 are rejected under 35 U.S.C. 102(b) as being anticipated by Siddha Report.

The rejections of these claims were proposed by the Requester and <u>are adopted</u> for the reasons set forth in the Request. See Request pp. 112-140, which are hereby incorporated by reference.

Issue 6:

Claims 1-6, 10-12, 14-15, 20-25, 29-31, 33, 39-44, 48-50, and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by Czezatke.

The rejections of these claims were proposed by the Requester and <u>are adopted</u> for the reasons set forth in the Request. See Request pp. 140-153, which are hereby incorporated by reference (for the rejected claims only).

Claims 34 and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by Czezatke. The Request did not propose to reject these claims. The body of these claims is the same as claim 15, which was rejected as noted above, except these claims are dependent from different parent claims. Each of the parent claims is rejected as noted above, and claim 15 is rejected, therefore claims 34 and 53 are rejected for the same reasons, which are also incorporated by reference from the Request.

The proposed rejections of claims 32 and 51 as being anticipated by Czezatke are <u>not adopted</u>.

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These claims require the severing of any snapshot pointers from the first active file

system to the second active file system. The Request alleges this is met in Czezatke as follows:

"The Czezatke file system discloses making snapshots (clones) of writable snapshots, each of

which is an active file system. *See* Sec. 4 (discussing implementing writable, clonable, clones)."

See, e.g., Request p. 149. This clearly is not an explicit disclosure that snapshot pointers are

severed, and the Request has not explained how this feature is inherent, nor does the examiner

clearly see how this feature is necessarily present in Czezatke. The examiner thus declines to

find that this constitutes an anticipation of the claims by Czezatke.

Issue 7:

Claims 1-5, 10-12, 20-24, 29-31, 39-43, and 48-50 are rejected under 35 U.S.C. 102(a) as

being anticipated by LSI Logic.

The rejections of these claims were proposed by the Requester and are adopted for the

reasons set forth in the Request. See Request pp. 154-168, which are hereby incorporated by

reference.

Issue 8:

Claims 1-5, 10-12, 20-24, 29-31, 39-43, and 48-50 are rejected under 35 U.S.C. 102(a) as

being anticipated by Osorio.

It is noted the claims require "active file systems," see, e.g., claim 1; Osorio does not

explicitly use this term, referring instead to databases, but Osorio does teach active file systems.

Both the base database and snapshot database of Osorio are sets of data that can be accessed and

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modified. See p. 4 (noting snapshot area can be written to). These databases can therefore be

deemed active file systems as the term is defined in the '001 patent, see col. 4 lines 27-28.

The rejections of these claims were proposed by the Requester and are adopted for the

reasons set forth in the Request (in light of the observations noted above). See Request pp. 168-

174, which are hereby incorporated by reference.

Issue 9:

Claims 1, 10, 20, 29, 39, and 48 are rejected under 35 U.S.C. 102(e) as being anticipated

by Grummon.

The rejections of these claims were proposed by the Requester and are adopted for the

reasons set forth in the Request. See Request pp. 174-176, which are hereby incorporated by

reference.

Issue 10:

The examiner found that no SNQ was raised by Allen. See the attached Order Granting

Reexamination.

Issue 11:

Claims 1, 10, 20, 29, 39, and 48 are rejected under 35 U.S.C. 102(e) as being anticipated

by Lim.

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The rejections of these claims were proposed by the Requester and are adopted

substantially as set forth in the Request. The examiner, however, provides further explanation of

Lim.

Lim describes a computer system state checkpoint mechanism. See Title. The system

periodically takes checkpoints, i.e. snapshots, of the system state so that the system can later be

restored to that state. See abstract. Note that Lim describes the terms checkpoints and snapshots

as interchangeable. Col. 2 lines 40-41; col. 3 lines 31-32. Also note that checkpoints are stored

as state vectors that are accessible, and when loaded as described below they may be modified;

thus, they are a collection of data that may be accessed and modified. They therefore may be

considered active file systems, see '001 patent col. 4 lines 27-28.

When a checkpoint is originally taken, it is saved as the entire state vector of the system.

Col. 23 lines 52-55. When later checkpoints are taken, the entire state is not saved; instead,

copy-on-write is utilized, where only a vector of changes is saved. Id. That is, the new

checkpoint includes only data that has been changed, as well as pointers back to the original data

in the original checkpoint that was not changed. Col. 23 line 63 – col. 4 line 5. Thus, any later

checkpoint initially shares any unchanged data with the earlier checkpoint since the new

checkpoint points to the same data.

Lim also describes that the various different checkpoints can be loaded into different

virtual machines, allowing for multiple processing paths. Col. 20 lines 10-22. Or, a checkpoint

can be loaded into more than one virtual machine, serving as the basis for different transactions

which can lead to the checkpoint having multiple checkpoint successors in a tree. Col. 21 lines

1-5. If the same checkpoint is loaded into two different machines, the two checkpoints will of

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course be identical initially; they will share data in that they will have the same pointers back to

the original unmodified data, as described in the preceding paragraph. Further, if an original

checkpoint is loaded into one machine, and its successor is loaded in a second machine, the two

will also initially share data because the successor was created using the copy-on-write technique

as described above. Thus, when multiple checkpoints are loaded into multiple machines as

described in cols. 20-21 of Lim, these checkpoints may initially share data.

This feature of loading the checkpoints into different virtual machines, however, allows

the users of these machines to perform different operations on the checkpoints, causing the

processing paths to diverge. Col. 20 lines 31-38. This loading of the checkpoints also

constitutes making the checkpoint writable, as the user may change parameters, *see id.* Thus,

changes made to a checkpoint at one virtual machine are not reflected in the checkpoints at

another virtual machine.

Given these explanations of Lim, the application to the claims will now be discussed.

Claim 1: A method of operating data storage, the method including maintenance of plural

active file systems, wherein each of the active file systems initially access data shared with

another of the active file systems, and wherein changes made to each of the active file systems

are not reflected in the active file system with which the changed active file system shares the

data.

Lim's checkpoints are a collection of data and when loaded into the machine they may be

modified. They are therefore active file systems within the definition of the '001 patent.

Checkpoints created via copy-on-write initially share data with their parent checkpoint, and also

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when the same checkpoint is loaded into different machines those identical checkpoints will

necessarily initially share data, for example they will both include pointers to the same

unmodified data. When these separately loaded checkpoints are acted upon by different users

using different processing steps their processing paths will diverge, and changes to one will not

be reflected in the other.

Claim 10: A method of creating plural active file systems, comprising the steps of:

making a snapshot of a first active file system, the snapshot initially sharing data with the first

active file system; and converting the snapshot to a second active file system by making the

snapshot writable, with changes made to the first active file system not reflected in the second

active file system, and with changes made to the second active file system not reflected in the

first active file system.

Lim's checkpoints are a collection of data and when loaded into the machine they may be

modified. They are therefore active file systems within the definition of the '001 patent. When a

checkpoint is made of a checkpoint, it is created using copy-on-write techniques so that only

modifications are stored, with pointers pointing to any unmodified data. Such checkpoints will

therefore initially share data. Lim describes checkpointing and snapshotting to be

interchangeable terms, therefore this taking of a checkpoint is a taking of a snapshot. When a

checkpoint and its snapshot are loaded into a virtual machine they are made writable and may be

acted upon by different users using different processing steps so their processing paths will

diverge; changes to one will not be reflected in the other.

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Claims 20 and 29: These claims are the same as claims 1 and 10, respectively, except are

drawn to a memory storing information including instructions, the instructions executable by a

processor to perform the methods of claims 1 and 10. These claims are therefore rejected for the

same reasons as those claims. Lim, being a computer system, necessarily includes a memory

that stores instructions executable by a processor to perform the described methods. See also

Lim col. 29 lines 26-59 (describing that the invention can be implemented in typical computer

system components having a memory and processor).

Claims 39 and 48: These claims are the same as claims 1 and 10, respectively, except are

drawn to a storage system, comprising: at least one storage device; an interface to at least one

computing device or network for receiving and sending information; and a controller that

controls storage and retrieval of the information in the storage device, the controller operating

under program control to perform the methods of claims 1 and 10. These claims are therefore

rejected for the same reasons as those claims. Lim's computer system necessarily includes the

claimed elements, as the checkpoints are stored in a storage device, there is necessarily an

interface to the computing device for transmission of information, and necessarily some

controller that controls the storage of the checkpoints and controls the performance of the

methods, for example the virtual machine monitor that is discussed throughout Lim.

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NOTICE RE PATENT OWNER'S CORRESPONDENCE ADDRESS

Effective May 16, 2007, 37 CFR 1.33(c) has been revised to provide that:

The patent owner's correspondence address for all communications in an *ex parte* reexamination or an *inter partes* reexamination is designated as the correspondence address of the patent.

> *Revisions and Technical Corrections Affecting Requirements for Ex Parte and Inter Partes Reexamination*, 72 FR 18892 (April 16, 2007)(Final Rule)

The correspondence address for any pending reexamination proceeding not having the same correspondence address as that of the patent is, by way of this revision to 37 CFR 1.33(c), automatically changed to that of the patent file as of the effective date.

This change is effective for any reexamination proceeding which is pending before the Office as of May 16, 2007, including the present reexamination proceeding, and to any reexamination proceeding which is filed after that date.

Parties are to take this change into account when filing papers, and direct communications accordingly.

In the event the patent owner's correspondence address listed in the papers (record) for the present proceeding is different from the correspondence address of the patent, it is strongly encouraged that the patent owner affirmatively file a Notification of Change of Correspondence Address in the reexamination proceeding and/or the patent (depending on which address patent owner desires), to conform the address of the proceeding with that of the patent and to clarify the record as to which address should be used for correspondence.

Telephone Numbers for reexamination inquiries:

```
Reexamination and Amendment Practice        (571) 272-7703
Central Reexam Unit (CRU)                    (571) 272-7705
Reexamination Facsimile Transmission No.     (571) 273-9900
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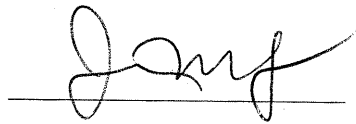
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Any inquiry concerning this communication or earlier communications from the

Reexamination Legal Advisor or Examiner, or as to the status of this proceeding, should be

directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:

James Menefee
Primary Examiner
Central Reexamination Unit 3992
(571) 272-1944

April 2, 2008

Conferees: